

**The Ohio State University  
College of Engineering**

**Corrosion: Fundamentals and Experimental Methods  
Online Course - 2021**

The *Corrosion: Fundamentals and Experimental Methods* course will cover the fundamentals of corrosion and various electrochemical techniques. Lectures and laboratories will be used to illustrate how electrochemical techniques are applied, when they should be used, and how the various techniques can be integrated to solve complex problems. The course will be useful for people entering the corrosion field and for professionals looking for a refresher course.

The training for this course would normally occur in person over a 5-day period. Due to COVID-19, in 2021 the course will be taught in online format. Students must attend and complete all sessions in order to obtain a certificate of completion. The course will be taught by Dr. Gerald Frankel, Dr. Jenifer Locke, and Dr. Eric Schindelholz from the department of Materials Science and Engineering and also Dr. Rudy Buchheit, Dean of the College of Engineering, University of Kentucky.

This course is based on the long running corrosion short course that occurred annually at Penn State University and was taught in part by the lecturers of this course at OSU. The content and approach will be very similar. However, changes will be made to accommodate the online format. We have tried to build flexibility into the schedule, knowing that many people are working from home and have responsibilities and constraints that might limit the amount of time they can dedicate to the course each day. Numerous options for informal discussions and questions are provided. Here are the different components of the course:

Live, synchronous lectures	Most of the lectures will be live over Zoom, allowing interactions and live questions. However, to make the online format of the corrosion short course more enjoyable and effective, more breaks have been inserted and lecture lengths have been reduced. Participants are expected to be present for these live lectures.
Pre-recorded lectures	Some of the content has been removed from the live lectures and will be provided as pre-recorded lectures. These pre-recorded lectures will be available through a course website starting one week prior to the course so participants can, if they wish, view them during the week or weekend before the course starts. However, each day begins with an hour, from 8:30-9:30 AM Eastern US time, that may also be used for viewing of the pre-recorded lectures.
Labs	Labs are an important part of this course. The intent is to provide participants with experience using electrochemical methods to address corrosion problems. To provide the best lab experience, the labs will also be in a live, synchronous fashion. Teaching assistants will be in the laboratory performing each experiment, and the instructors will be narrating the activities. Students will be able to ask questions as it happens. Data from the labs will be provided through the course website.
Data analysis time	After each lab, one hour at the end of the day, 4:00-5:00, is set aside in the schedule for students to spend some time analyzing the data from the lab of that day. Professors will be available in breakout rooms to help with the analysis, but attendance during this time is not required. Students might opt to do this analysis later in the evening.
Office Hours	The instructors will be available every evening from 7:00-8:00 for discussions, questions, data analysis, etc. They are also willing to discuss data from students' work in breakout rooms. This time is also optional.
Lunch & Learn	During lunchtime, the instructors will also be available for discussions and questions.



Program Sponsor